System Prefs, Screen Saver, Disk Image, and Installers

Session 004

Mac OS X Party Favors

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Mac OS X Party Favors

- Favor #1
  - Writing a Mac OS X Screen Saver
- Favor #2
  - Writing a Mac OS X Preference Pane
- Favor #3
  - Disk Image Update
- Favor #4
  - Update on the Mac OS X Installer

Favor#1
Writing a Mac OS X Screen Saver

Mike Trent

Why a Screen Saver?

- Why not?
- Fun
- Marketing
- Save your screen—Not!

Screen Saver Overview

- Modular plug-in architecture
- Cocoa-based framework
- Multiple drawing environments
  - QuickDraw
  - Quartz
  - OpenGL

Modular Architecture

- Screen Saver is an application
- Loads bundles that:
  - Contain code
  - Contain resources
    - Pictures
    - Sounds
    - Etc.
  - Link against Screen Saver framework

Screen Saver Framework

- Comprises two major components
    - ScreenSaverView
    - ScreenSaverDefaults

ScreenSaverView

- Inherits from NSView
  - Handles drawing
  - Handles user input
- Adds animation timer
- Adds additional Screen Saver features

ScreenSaverView Drawing

- Some prep work required
- Call directly into
  - Quartz
  - QuickTime
  - QuickDraw
  - OpenGL
- Two methods to draw
  - -[NSView drawRect:]
  - -[ScreenSaverView animateOneFrame]

ScreenSaverView Drawing

- Multiple monitors
  - One ScreenSaverView instance per monitor for free
  - No need for device loops!
- Use CoreGraphics to set screen depth, etc.

ScreenSaverView User Input

- Hook into the Cocoa event loop
  - Listen to the mouse
  - Listen to the keyboard
- Multiple methods
  - -[NSResponder keyDown:]
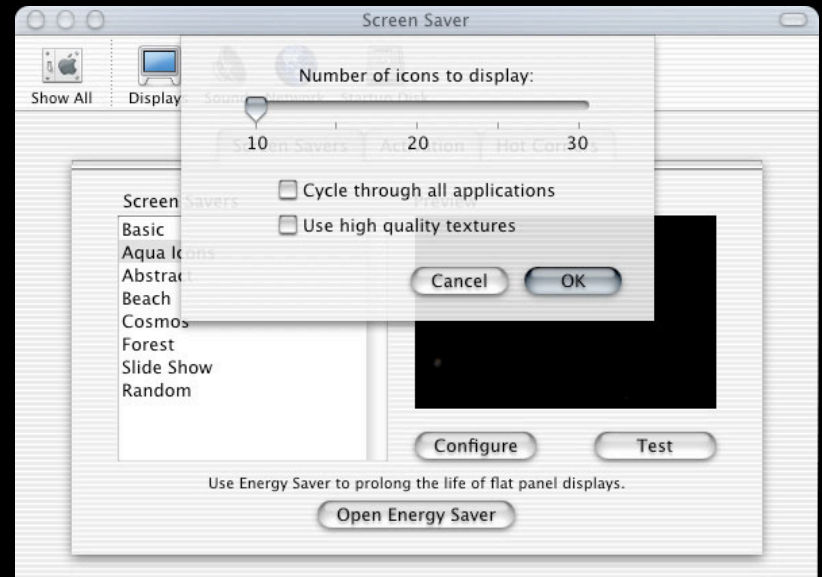 - -[NSResponder mouseMoved:]
  - Etc.

ScreenSaverView Extras

- Animation timer
    - -[ScreenSaverView animationTimeInterval]
    - -[ScreenSaverView setAnimationTimeInterval:]
- Specify window backing store type
- Control the gamma fade

ScreenSaverDefaults

- Handles User Preferences
- Use Interface Builder to design your UI
- Avoid NSUserDefaults

Demo

Screen Save Coding

Mike Trent

Installation

- Your screen saver must be in either of two specific locations
  - ~/Library/Screen Savers
  - /Library/Screen Savers
- Use '.saver' file name extension
- Set Type and Creator
  - Coming soon!

Favor #2:
System Preference Panes

Robert T. Bowers

What Are Preference Panes?

- Plug-ins in the System Preferences application
- Provide
  - Cross-context configuration
  - User-perceived system-wide functionality
  - Hardware configuration

Architecture

- Cocoa bundles
- Includes
    - System Preferences application
    - PreferencePane framework
    - Must inherit from PrefPane class
- Provides same permissions as current user
- Storage via CFPreferences

When Not to Make a Pref Pane

- When performing application-specific settings
  - Finder preferences
  - Mail preferences
- When doing real work
  - Burning CDs/DVDs
  - Ripping MP3s
  - Sherlock

When Not to Make a Pref Pane

- When primarily providing status or feedback
  - Console
  - Process Viewer

- When using an Application/Document model
  - Address Book
  - iMovie

- When doing something irreversible
  - Installing a system update
  - Reformatting a disk

System Preferences Application

User Interface Guidelines

- Preference panes
  - Have a standard width
  - Have a variable height (within limits)
- Adhere to Mac OS X Human Interface Guidelines
- Avoid mixing Mac OS X and third-party preference panes

Demo

Preference Pane Coding

Maxym Runov

Additional Properties

- Your Pref Pane's Property List is your friend
- Pay attention to these keys:
  - NSPrefPaneIconLabel
    - Supports wrapping to multiple lines
  - CFBundleIconFile
  - CFBundleIdentifier

Installation Guidelines

- Three locations
    - /System/Library/PreferencePanes
        - Reserved for Apple
    - /Library/PreferencePanes
        - Requires Admin privileges to install
        - Available to all users
    - ~/Library/PreferencePanes
        - Available to that user only

Third-party Preference Panes Sample

Robert T Bowers

In Conclusion

- Lots of fun
- Be careful of when you do one
- Do not do any work

Favor #3:
Distributing Your App Over the Internet

Grace Kvamme

Downloads Made Easier

- Minimize steps to download apps
- Lead the user through the process
- Ensure security

Process for User

Download

1. Click to download
2. Are you sure?
3. Installs or copies to Applications folder

Tools

- Application bundles
  - Use wherever possible
  - Create with PackageMaker
- Installer packages
  - Display licensing agreement
  - Let user decide where to install
  - Create with Apple's Installer

Tools

- Disk Images
    - Archive files
    - Compress them
    - Display "are you sure" dialog box
    - Create using Disk Copy

Tools

- Disk Images
  - **New** • Specify download location
  - **New** • Launch Installer
  - **New** • Move Disk Image to Trash

Process for User

1. Click to download

2. Are you sure?

3. Installs or copies to Applications folder

Favor #4:
The Mac OS X Installer

Jean-Pierre Ciudad

The Mac OS X Installer

- Initially designed to install the OS

- Now addressing application installs

- In Jaguar we will have

  - Bug fixes

  - New features

  - Improved PackageMaker

Bug Fixes

- Changes the modification date on folders
- Updates existing languages only
- Supports multiple simultaneous installs
- Follows symlinks
  - Off by default
- Checks for admin status before requiring authorization
  - Single users are Administrators by default

New Features

- File hinting for special files

- Locating application bundles to upgrade

- Alternate installer window backgrounds

- Improved package format

  - Standard bundle

  - Property list

Improved PackageMaker

- Creates new style packages and metapackages
- Verifies package validity
- Handles all known flags
- Handles file hinting
- Includes a command line tool
- Work in progress

In Conclusion

- Provide drag install whenever possible
- Future plans include
    - Better tools
    - More . . .
- Send feedback

Roadmap

001 User Experience:
Interface Design Principles

Hall 2
Tue., 9:00am

002 User Experience:
Adopting Aqua

Hall 2
Tue., 10:30am

302 Cocoa API Techniques

Hall 2
Thurs., 9:00am

904 Using Interface Builder

Hall 2
Thurs., 3:30pm

Who to Contact

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http://developer.apple.com/wwdc2002/urls.html

Documentation

- Preference Panes
  - Documentation > Additional Technologies > Preference Panes
  - **developer.apple.com/techpubs/macosx/ AdditionalTechnologies/PreferencePanes/**

- Screen Saver
  - Documentation > Additional Technologies > Screen Saver Reference
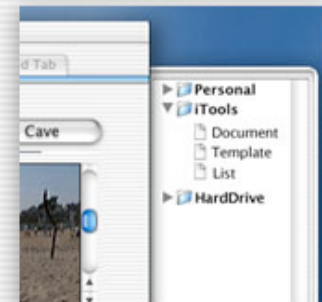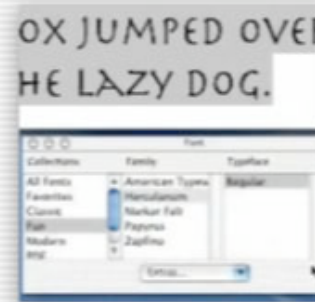 - **developer.apple.com/techpubs/macosx/AdditionalTechnologies/ ScreenSaver/Reference/ObjC_classic/ScreenSaverTOC.html**
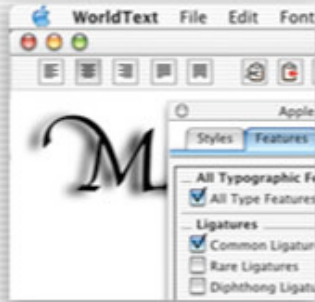
- PackageMaker
  - Documentation > Developer Tools > PackageMaker Help
  - **developer.apple.com/techpubs/macosx/DeveloperTools/ PackageMaker/PackageMaker.help/Contents/Resources/ English.lproj/index.html**

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http://developer.apple.com/wwdc2002/urls.html